

REMARKS

Initially, Applicant would like to express his appreciation to the Examiner for the detailed Official Action provided.

Claims 1-7 are currently pending. Applicant respectfully requests reconsideration of the outstanding rejections, and allowance of all the claims pending in the present application.

35 U.S.C. § 112, Second Paragraph Rejection

On page 2 of the Official Action, claim 3 was rejected under 35 U.S.C. § 112, second paragraph. Applicant respectfully traverses this rejection.

The Examiner has stated that "claim 3 fails to conform with present US practice with respect to product by process claim(s) (format), i.e., the independent claim should be a process, and then the dependent claim is a product made by the above independent claim process, not the other way around as presented herein." The Examiner has also directed Applicant's attention to In re Lyell, 17 USPQ2d 1548.

Applicant once again submits that the unduly limiting position taken by the Examiner with regard to product-by-process claims finds no support in U.S. patent law or practice. While the format described by the Examiner (i.e., an independent claim to a process, followed by a dependent claim to a product made by the process of the independent claim) is perhaps the most common format for product-by-process claims, *it*

is by no means the exclusive format therefor. Applicant submits that product-by-process claims can take many forms, such as an independent product claim (i.e., "A product made by the process of . . ."), or a dependent product claim (i.e., "The product according to claim 1, made by the process of . . ."). Applicant notes that claim 3 of the present application is drafted in the latter format, as a dependent product claim with a product-by-process limitation.

Applicant directs the Examiner's attention to MPEP 2173.05(p), which includes a discussion of In re Lyell,¹⁷ USPQ2d 1548 therein. In Lyell, the claim at issue was directed to a tool *and* a method for using the tool (i.e., a product *and* a process), which was deemed improper by the Board. Applicant once again notes that claim 3 of the present application is directed to *an objective lens* (i.e., a product) and not to a process. Applicant submits that Lyell does not prohibit product-by-process claims, nor does it prohibit the particular product-by-process format in which claim 3 is drafted. The Examiner's attention is directed to the fact that MPEP 2173.05(p) contains two section, the first ("PRODUCT-BY-PROCESS") which clearly states that product-by-process claims are acceptable, and the second ("PRODUCT AND PROCESS IN THE SAME CLAIM") which sets forth the rule of Lyell. Accordingly, it is blatantly clear from MPEP 2173.05(p) that the holding in Lyell is not a prohibition against product-by-process claims, nor against the product-by-process format in which claim 3 is drafted.

Accordingly, the Examiner is once again requested to indicate where any support can be found in the U.S. patent laws (35 U.S.C.), patent rules (37 CFR), MPEP. or case law for his stated position that the *only* proper format for product-by-process claims in "present US practice" is that of an independent claim to a process, followed by a dependent claim to a product made by the process of the independent claim. Lacking any such support, Applicant submits that claim 3 is drafted in a proper and acceptable product-by-process format.

Accordingly, Applicant submits that claim 3 properly sets forth a product-by-process limitation, and is directed to subject matter which Applicant regards as his invention. Note MPEP 2113 and 2173.05(p). Applicant submits that only structural features of the product (i.e., the objective lens) are claimed, not process or manufacturing steps, and that this is a proper dependent claim. Accordingly, Applicant once again submits that the rejection of claim 3 under 35 U.S.C. § 112, second paragraph, is improper, and requests that it be withdrawn.

35 U.S.C. § 103(a) Rejections

On page 3 of the Official Action, claims 1, 2 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JUTTE et al. (U.S. Patent No. 6,147,956) in view of BREZOCZKY et al. (U.S. Patent No. 5,351,229) and KAMIYAMA et al. (U.S. Patent No. 6,043,940). The Examiner takes the position that JUTTE et al. discloses a single glass objective lens. The Examiner acknowledges that JUTTE et al. lacks any disclosure of a flat surface on the optical medium side, as well as a numerical aperture of at least 0.7. However, the Examiner takes the position that it would have been obvious to modify the objective lens of JUTTE et al. to include a flat surface based on the teachings of BREZOCZKY et al. The Examiner also takes the position that it would have been obvious to modify the objective lens of JUTTE et al. to have a numerical aperture of at least 0.7 based on the teachings of KAMIYAMA et al.

Applicant respectfully traverses the rejection of claims 1, 2 and 6 under 35 U.S.C. § 103(a) based on JUTTE et al. in view of BREZOCZKY et al. and KAMIYAMA et al.

Applicant notes that each of the claims recites *a single glass plano-convex objective lens having a rotationally symmetrical convex aspherical surface at the incident side and a flat surface at the optical medium side, and having a numerical aperture of at least 0.7.*

As acknowledged by the Examiner, JUTTE et al. lacks any disclosure of *a flat surface at the optical medium side or a numerical aperture of at least 0.7.*

Applicant submits that it would not have been obvious to one of ordinary skill in the art to provide the objective lens of JUTTE et al. with *a flat surface at the optical medium side.* Applicant notes that the Examiner has not provided any statement as to why one of ordinary skill in the art would have been motivated to make such a modification. In this regard, Applicant notes that the statement of reasoning described at column 8, lines 34-39 of BREZOCZKY et al. is given as a reason for providing the bottom surface of the objective lens at the same level as the bottom surface of a slider 51, rather than as a reason for providing an objective lens with a flat surface per se.

Applicant further submits that modifying the objective lens of JUTTE et al. with a flat surface would effectively destroy the teachings of JUTTE et al. itself of providing both a concave and a convex surface in an objective lens. Applicant further submits that any such modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art.

Applicant submits that it would not have been obvious to one of ordinary skill in the art to provide the objective lens of JUTTE et al. with *a numerical aperture of at least*

0.7. Applicant notes that KAMIYAMA et al. itself does not disclose any embodiment of a single element objective lens having a numerical aperture of 0.7, but merely mentions such a theoretical numerical aperture value in calculating a theoretical beam spot size (note column 1, lines 24-29). The teachings of KAMIYAMA et al. are instead directed to a solid immersion lens system, in which an SIL 5 is provided along with an objective lens 4 in order to achieve an appropriate numerical aperture. Accordingly, Applicant submits that KAMIYAMA et al. does not provide any teachings which would have motivated, or enabled, one of ordinary skill in the art to provide the objective lens of JUTTE et al. with a numerical aperture of at least 0.7. Applicant further submits that any such modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art.

Further, even assuming, arguendo, that KAMIYAMA et al. discloses an objective lens having a numerical aperture of 0.7, Applicant submits that it would still not have been obvious to one of ordinary skill in the art to make the modifications suggested by the Examiner. Providing such an numerical aperture would constitute an impermissible modification of a modification (i.e., replacing the concave surface of the JUTTE et al. objective lens with a flat surface, and further modifying the objective lens to achieve a numerical aperture of 0.7). Further, Applicant submits that such a piecemeal analysis of

the references is particularly inapplicable in the area of lens design.

Applicant also submits that dependent claims 2 and 6, which are at least patentable due to their dependency from claim 1 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record.

Applicant respectfully submits that the rejection of claims 1, 2 and 6 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection, and an early indication of the allowance of these claims.

On pages 3 and 4 of the Official Action, claims 1, 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over SUDA et al. (U.S. Patent No. 4,657,352) in view of KASHIWAGI et al. (U.S. Patent No. 6,353,592) and JUTTE et al. (U.S. Patent No. 6,147,956).

Applicant respectfully traverses the rejection of claims 1, 2 and 3 under 35 U.S.C. § 103(a) based on SUDA et al. in view of KASHIWAGI et al. and JUTTE et al.

Applicant notes that each of the claims recites an objective lens which comprises *a single glass plano-convex lens which is configured to maintain a numerical aperture of at least 0.7*. As acknowledged by the Examiner, SUDA et al. lacks any disclosure of an objective lens *having an NA of at least 0.7*.

As also noted by the Examiner, KASHIWAGI et al. discloses an objective lens

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having a higher NA. However, KASHIWAGI et al. only teaches achieving a high NA by providing a *two* element objective lens 31, 32 (note Fig. 24; column 19, lines 11-26), rather than a *single* element objective lens. Applicant submits that KASHIWAGI et al. fails to provide any teaching of providing a *single element objective lens having an NA of at least 0.7*.

As discussed on page 2 of the present application, such multi-lens systems may achieve an operable NA, however there are inherent problems related to alignment, space requirements and fine actuator capabilities, which are not present with a single lens system. The present invention achieves the desired NA by providing a *single glass plano-convex objective lens*, thus avoiding the problems of such multi-lens systems.

Accordingly, Applicant submits that one of ordinary skill in the art would not have been motivated, nor enabled, to configure a single lens such as that disclosed in SUDA et al., as having *an NA of at least 0.7*, based upon the teachings of KASHIWAGI et al. Applicant submits that any such modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art.

In regard to the additional modification suggested by the Examiner based on the teachings of JUTTE et al., Applicant submits that such an additional modification would

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constitute an impermissible modification of a modification. Further, Applicant submits that such a piecemeal analysis of the references is particularly inapplicable in the area of lens design.

Applicant also submits that dependent claims 2 and 3, which are at least patentable due to their dependency from claim 1 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record.

Applicant respectfully submits that the rejection of claims 1, 2 and 3 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection, and an early indication of the allowance of these claims.

On page 4 of the Official Action, claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JUTTE et al. (U.S. Patent No. 6,147,956) in view of BREZOCZKY et al. (U.S. Patent No. 5,351,229) and KAMIYAMA et al. (U.S. Patent No. 6,043,940), and further in view of KIRIKI et al. (U.S. Patent No. 6,349,083).

Applicant respectfully traverses the rejections of claims 3 and 4 under 35 U.S.C. § 103(a).

Applicant initially notes that KIRIKI et al. does not disclose the claimed objective lens, and thus can not possibly cure the deficiencies in the teachings of JUTTE et al., BREZOCZKY et al. and KAMIYAMA et al., as discussed above in regard to the

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rejection of claim 1. Accordingly, Applicant submits that dependent claims 3 and 4 are at least patentable due to their dependency from claim 1 for the reasons noted above.

Further, these claims also recite additional features of the invention and are also separately patentable over the prior art of record.

Applicant submits that the modifications suggested by the Examiner are clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art. Applicant submits that such an additional modification would constitute an impermissible modification of a modification. Further, Applicant submits that such a piecemeal analysis of the references is particularly inapplicable in the area of lens design.

Accordingly, Applicant submits that the rejection of claims 3 and 4 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above reasons. Applicant respectfully requests reconsideration and withdrawal of the rejections, and an early indication of allowance of these claims.

On pages 4 and 5 of the Official Action, claims 5 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JUTTE et al. (U.S. Patent No. 6,147,956) in view of BREZOCZKY et al. (U.S. Patent No. 5,351,229) and KAMIYAMA et al. (U.S. Patent No. 6,043,940), and further in view of NAKAOKI et al. (U.S. Patent No.

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5,978,320).

Applicant respectfully traverses the rejections of claims 5 and 7 under 35 U.S.C. § 103(a), at least for the reasons noted above in regard to the rejection of claim 1.

Applicant initially notes that, although NAKAOKI et al. includes disclosure of a light source and a magnetic coil, it does not include the claimed objective lens, and thus can not possibly cure the deficiencies in the teachings of JUTTE et al., BREZOCZKY et al. and KAMIYAMA et al., as discussed above in regard to the rejection of claim 1.

Further, Applicant notes that the system of JUTTE et al. does not include a magnetic coil, and the Examiner has provided no statement as to why one of ordinary skill in the art would have been motivated to provide such a magnetic coil in the system of JUTTE et al.

Applicant submits that such a modification would clearly require more than a mere relocation of parts, as stated by the Examiner. Accordingly, Applicant submits that it would not have been obvious to one of ordinary skill in the art to provide a magnetic coil in the system of JUTTE et al., much less a magnetic coil arranged on a flat surface of an objective lens.

Applicant submits that the modifications suggested by the Examiner are clearly the result of impermissible hindsight reasoning based upon the teachings of the present application, rather than being based upon what the teachings of the prior art would fairly suggest to one of ordinary skill in the art. Applicant submits that such an additional

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modification would constitute an impermissible modification of a modification. Further, Applicant submits that such a piecemeal analysis of the references is particularly inapplicable in the area of lens design.

Applicant also submits that dependent claim 7, which is at least patentable due to its dependency from claim 5 for the reasons noted above, recites additional features of the invention and is also separately patentable over the prior art of record.

Accordingly, Applicant submits that the rejection of claims 5 and 7 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above reasons. Applicant respectfully requests reconsideration and withdrawal of the rejections, and an early indication of allowance of these claims.

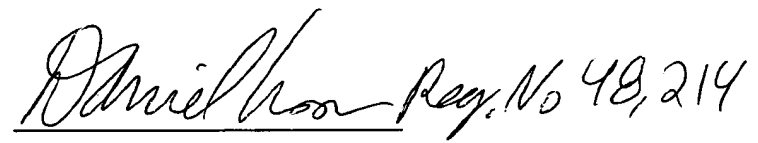
SUMMARY AND CONCLUSION

Reconsideration of the outstanding Official Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so.

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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